

REMARKS

This submission is in response to the Office Action dated June 25, 2008 (the "Office Action").

Status of the Claims

Claims 1– 14 are pending in the application. Applicants have amended claims 1 and 10 without prejudice or disclaimer. Applicants have added new claim 14. No new matter has been added.

The Invention

Prior to discussing the substantive rejections, it is instructive to first briefly review the invention. The invention provides a second (different) pregroove modulation to an auxiliary control area (Fig. 1, 12) of the pregroove. This second (different) pregroove modulation is applied in addition to the conventional wobble modulation, well known in the art. The second (different) pregroove modulation has the advantage of providing a relatively large capacity for storing auxiliary control information (e.g., code for accessing recorded information, an identifier to support copy-control, anti-piracy information, a watermark, audio or video material and so on). Conventional wobble modulation may require up to 100 wobble periods for transferring a single bit of control information. The pregroove modulation, however, provides a large amount of control data in a much shorter time than can be achieved using such conventional wobble modulation. This advantageously increases the speed of the startup procedure after inserting a record carrier. The second (different) pregroove modulation is applied in an auxiliary control area and is constituted by variations of a physical parameter related to the shape of the pregroove, such as, for example, variations of the width of the pregroove (see Fig. 1d), or variations of the depth of the pregroove (see Fig. 1e). The pregroove (width, depth) modulation along the pregroove track is used to generate an additional data channel for storing the auxiliary control information. The pregroove modulation is

detectable during scanning by variations of the reflected beam similar to the variations due to the marks in the track that are detectable by variations in the reflected beam, e.g., further variations in reflection.

112 Rejections

Claim 6 was rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as their invention. Claim 6 has been amended in a manner which is believed to overcome the objection. Claim 14 has been added to claim the objectionable subject matter from Claim 6.

103 Rejections

Claims 1-4, 7-8, 10 and 12 are allowable

The Office has rejected claims 1-4, 7-8, 10 and 12 at paragraph 5 of the Office Action, under 35 U.S.C. § 103(a), as being unpatentable over EP 1,291,854 (“Kobayashi”) in view of U.S. Patent Application No. 2002/0031064 (“Oostveen”) and in further view of U.S. Patent No. 5,870,375 (“Maeda”). Applicants respectfully traverse the rejections.

Claims 1 and 10 include elements not found in the cited portions of Kobayahi, Oostveen and Maeda. Specifically, the cited portions of Kobayahi, Oostveen and Maeda fail to disclose or suggest a pregroove (14) including an auxiliary control area (12) in which the pregroove (14) is modulated for encoding auxiliary control information, the pregroove modulation (13) representing the auxiliary control information, the pregroove modulation (13) constituted by variations of a physical parameter related to the shape of the pregroove, as in claims 1 and 10 (Emphasis Added).

The Office Action admits that Kobayahsi does not teach a pregroove exhibiting a pregroove modulation constituted by variations of a physical parameter related to the shape of the pregroove, as in claims 1 and 10. The Office Action does not cite Maeda for

teaching a pregroove exhibiting a pregroove modulation constituted by variations of a physical parameter related to the shape of the pregroove, as in claims 1 and 10. Maeda is only cited for teaching a record carrier with wobble modulation for representing physical address information indicating the physical position of the physical address with respect to a starting point of the track. *See* Maeda, Abstract.

In contrast to claims 1 and 10, the cited portions of Oostveen do not teach or suggest a record carrier of a writable type having a pregroove. Instead, Oostveen is directed to a ROM disk that teaches a record carrier having information marks, for example in the form of pits, referred to as first variations in Oostveen. Oostveen also teaches the application of conventional wobble modulation caused by variations associated with the information marks, referred to as second variations in Oostveen. *See*, Oostveen, par. 1, "An information system according to the invention comprises a record carrier (1) and a playback apparatus (20). The record carrier has information marks along a track (11) thereof and exhibits first variations caused by existence and nonexistence of the information marks along the track. The first variations represent an information signal recorded on said record carrier. The record carrier further exhibits second variations (W) caused by variations associated with the information marks. The phase of the second variations is coupled to the phase of the first variations."

The Examiner refers the Applicants to Figs. 1b and 1c of Oostveen for allegedly teaching a pregroove modulation constituted by variations of a physical parameter related to the shape of the pregroove. Applicants respectfully submit that Figs. 1b and 1c do not represent a pregroove modulation. Rather, in FIG. 1b of Oostveen, the variations in first physical parameters have the form of optical detectable marks 3 (e.g., pits) which alternate with intermediate areas 4. These optically detectable marks 3 taught in Oostveen are standard marks used in ROM disk technology. Applicants submit that this is different from a pregroove modulation (13) constituted by variations of a physical parameter related to the shape (e.g., width, depth, absence) of the pregroove. Given that Oostveen does not teach the use of a pregroove, it therefore follows that Oostveen cannot teach a pregroove modulation (13) constituted by variations of a physical parameter related to the shape of the pregroove, as in claims 1 and 10.

Further, the invention starts from a writable disk and uses the existing pregroove, by modulating it (i.e., pregroove modulation) in the manner described above, to generate ROM like data. This is achieved without disturbing the manufacturing process and more importantly, allows read out in a CA detector, where single marks can be used to obtain the data. In contrast, Oostveen performs read out in the push-pull and focus offset detectors, which are derived from the same primary beam. In the single embodiment in which Oostveen allows read out in a CA detector, the information to be read from the disc cannot be read from a single mark, via pregroove modulation,. Instead, many marks must be read and complex electronics and signal processing are required to extract the data in Oostveen when using CA detection.

Therefore, Kobayahi, Oostveen and Maeda, separately or in combination, do not disclose or suggest each and every element of claims 1 and 10, or of claims 2-4, 7-8 and 12 that depend from claims 1 and 10 respectively. Hence, 1-4, 7-8, 10 and 12 are allowable.

Claim 5 is allowable

The Office has rejected claim 5 at paragraph 34 of the Office Action, under 35 U.S.C. § 103(a), as being unpatentable over Kobayashi in view of Oostveen and in further view of U.S. Patent No. 5,982,738 (“Miyamoto”). Applicants respectfully traverse the rejection.

As explained above, the cited portions of Kobayashi, Oostveen and Maeda, separately or in combination, do not disclose each of the elements of claim 1, from which claim 5 depends. The cited portions of Miyamoto do not disclose the elements of claim 1 that are not disclosed by Kobayashi, Oostveen and Maeda. For example, Miyamoto does not disclose or suggest a pregroove (14) including an auxiliary control area (12) in which the pregroove (14) is modulated for encoding auxiliary control information, the pregroove modulation (13) representing the auxiliary control information, the pregroove modulation (13) constituted by variations of a physical parameter related to the shape of the pregroove, as in claims 1 and 10 (Emphasis Added). wherein the recalibration

processes are executed in dependence upon an amount of time lapsed since a previous calibration or recalibration. Therefore, the cited portions of Kobayashi, Oostveen and Maeda and Miyamoto, separately or in combination, do not disclose or suggest each and every element of claim 1 or of claim 5 which depends from claim 1. Hence, claim 5 is allowable.

B. Claim 6 is allowable

The Office has rejected claim 6 at paragraph 40 of the Office Action, under 35 U.S.C. § 103(a), as being unpatentable over Kobayashi in view of Oostveen in further view of Maeda as applied to claim 5 and further in view of U.S. Patent No. 6,044,051 ("Miyagawa"). Applicants respectfully traverse the rejection.

As explained above, the cited portions of Kobayashi, Oostveen and Maeda, separately or in combination, do not disclose each of the elements of claim 1, from which claim 6 depends. The cited portions of Miyagawa do not disclose the elements of claim 1 that are not disclosed by Kobayashi, Oostveen and Maeda. For example, Miyagawa does not disclose or suggest a pregroove (14) including an auxiliary control area (12) in which the pregroove (14) is modulated for encoding auxiliary control information, the pregroove modulation (13) representing the auxiliary control information, the pregroove modulation (13) constituted by variations of a physical parameter related to the shape of the pregroove, as in claims 1 and 10 (Emphasis Added). Therefore, the cited portions of Kobayashi, Oostveen, Maeda and Miyagawa, separately or in combination, do not disclose or suggest each and every element of claim 1 or of claim 6 which depends from claim 1. Hence, claim 6 is allowable.

C. Claim 9 is allowable

The Office has rejected claim 9 at paragraph 46 of the Office Action, under 35 U.S.C. § 103(a), as being unpatentable over Kobayashi in view of Oostveen in further view of Maeda as applied to claim 1 and further in view of U.S. Patent Application No. 20030002420 ("Yoon"). Applicants respectfully traverse the rejection.

As explained above, the cited portions of Kobayashi, Oostveen and Maeda, separately or in combination, do not disclose each of the elements of claim 1, from which claim 5 depends. The cited portions of Yoon do not disclose the elements of claim 1 that are not disclosed by Kobayashi, Oostveen and Maeda. For example, Yoon does not disclose or suggest a pregroove (14) including an auxiliary control area (12) in which the pregroove (14) is modulated for encoding auxiliary control information, the pregroove modulation (13) representing the auxiliary control information, the pregroove modulation (13) constituted by variations of a physical parameter related to the shape of the pregroove, as in claims 1 and 10 (Emphasis Added). wherein the recalibration processes are executed in dependence upon an amount of time lapsed since a previous calibration or recalibration. Therefore, the cited portions of Kobayashi, Oostveen, Maeda and Yoon, separately or in combination, do not disclose or suggest each and every element of claim 1 or of claim 9 which depends from claim 1. Hence, claim 9 is allowable.

D. Claim 11 is allowable

The Office has rejected claim 11 at paragraph 51 of the Office Action, under 35 U.S.C. § 103(a), as being unpatentable Kobayashi in view of Oostveen in further view of Maeda as applied to claim 10 and further in view of U.S. Patent No. 5,214,635 ("Satoh"). Applicants respectfully traverse the rejection.

As explained above, the cited portions of Kobayashi, Oostveen and Maeda, separately or in combination, do not disclose each of the elements of claim 1, from which claim 11 depends. The cited portions of Satoh do not disclose the elements of claim 1 that are not disclosed by Kobayashi, Oostveen and Maeda. For example, Satoh does not disclose or suggest a pregroove (14) including an auxiliary control area (12) in which the pregroove (14) is modulated for encoding auxiliary control information, the pregroove modulation (13) representing the auxiliary control information, the pregroove modulation (13) constituted by variations of a physical parameter related to the shape of the pregroove, as in claims 1 and 10 (Emphasis Added). Therefore, the cited portions of

Kobayashi, Oostveen and Maeda and Satoh, separately or in combination, do not disclose or suggest each and every element of claim 10 or of claim 11 which depends from claim 10. Hence, claim 11 is allowable.

E. Claim 13 is allowable

The Office has rejected claim 11 at paragraph 56 of the Office Action, under 35 U.S.C. § 103(a), as being unpatentable Kobayashi in view of Oostveen in further view of Maeda as applied to claim 10 and further in view of U.S. Patent No. 5,214,635 ("Satoh"). Applicants respectfully traverse the rejection.

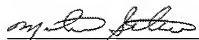
As explained above, the cited portions of Kobayashi, Oostveen and Maeda, separately or in combination, do not disclose each of the elements of claim 1, from which claim 11 depends. The cited portions of Satoh do not disclose the elements of claim 1 that are not disclosed by Kobayashi, Oostveen and Maeda. For example, Satoh does not disclose or suggest suggest a pregroove (14) including an auxiliary control area (12) in which the pregroove (14) is modulated for encoding auxiliary control information, the pregroove modulation (13) representing the auxiliary control information, the pregroove modulation (13) constituted by variations of a physical parameter related to the shape of the pregroove, as in claims 1 and 10 (Emphasis Added). Therefore, the cited portions of Kobayashi, Oostveen and Maeda and Satoh, separately or in combination, do not disclose or suggest each and every element of claim 10 or of claim 13 which depends from claim 10. Hence, claim 13 is allowable.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1–14 are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Mike Belk, Esq., Intellectual Property Counsel, Philips Electronics North America, at 914-945-6000.

Respectfully submitted,



Michael A. Scaturro
Reg. No. 51,356
Attorney for Applicants

Mailing Address:
Intellectual Property Counsel
Philips Electronics North America Corp.
P.O. Box 3001
345 Scarborough Road
Briarcliff Manor, New York 10510-8001